

CLAIMS

What is claimed is:

1. A refrigerator having a cabinet with a pair of hinge holes, a door having a pair of hinge shafts and being rotatably coupled to the cabinet by engagement between the pair of hinge shafts and the pair of hinge holes, and a door-closing device to allow the door to be automatically closed toward the cabinet, the door-closing device comprising:
 - an auxiliary hinge shaft attached to a bottom of the door;
 - a restoring unit in a bottom of the cabinet to bias the door toward the cabinet when the door is opened;
 - a hinge lever connected between the auxiliary hinge shaft and the restoring unit and having a coupling hole in which the auxiliary hinge shaft fits; and
 - a cap fitted on an end of the hinge lever where the coupling hole is formed.
2. The refrigerator of claim 1, further comprising a grommet fitted in the coupling hole of the hinge lever and receiving the auxiliary hinge shaft, an upper end of the grommet having a flange that radially extends from the grommet and that is supported on the hinge lever, with the cap being interposed between the flange and the hinge lever.
3. The refrigerator of claim 1, further comprising a grease container, attached to a lower surface of the cap and having an opening in a top thereof, to hold grease therein.
4. The refrigerator of claim 3, wherein an internal diameter of the grease container is larger than a diameter of the coupling hole.
5. The refrigerator of claim 1, wherein the cap has a slot at a side thereof to receive the hinge lever, and has upper and lower through-holes formed at upper and lower walls of the cap to allow the auxiliary hinge shaft to pass therethrough.
6. A door closing device for a refrigerator having a cabinet and a door hingedly connected to the cabinet, the door closing device comprising:
 - an auxiliary hinge shaft attached to a bottom of the door;

a restoring unit in a bottom of the cabinet to bias the door toward the cabinet to automatically close the door;

a hinge lever between the auxiliary hinge shaft and the restoring unit, and having a coupling hole at an end of the hinge lever to receive the auxiliary hinge shaft; and

a cap placed on the end of the hinge lever having the coupling hole to prevent grease applied to the hinge lever and the coupling hole from being exposed outside the refrigerator.

7. The door closing device of claim 6, wherein the restoring unit comprises:
a movable rod having a front end connected to a rear end of the hinge lever;
a housing having a rear end rotatably connected to a lower end of the cabinet; and
an elastic member surrounding an outer surface of the movable rod and having a front end connected to the front end of the movable rod and a rear end connected to a front end of the housing, the elastic member biasing the movable rod rearward to automatically close the door.

8. The door closing device of claim 7, wherein the hinge lever is bent at a middle portion thereof to automatically close the door when the door is opened up to a predetermined angle and the restoring unit retracts the hinge lever into the cabinet, while maintaining the door in the opened position when the door is opened more than the predetermined angle.

9. The door closing device of claim 6, further comprising a grommet fitted in the coupling hole of the hinge lever and receiving the auxiliary hinge shaft to prevent abrasion between the auxiliary hinge shaft and the coupling hole, the grommet having a flange at an upper end thereof that radially extends from the grommet and is supported by an upper wall of the cap to hold the grommet within the coupling hole, the cap being interposed between the flange and the hinge lever to prevent abrasion between the flange and the hinge lever and to reduce noise.

10. The door closing device of claim 9, wherein grease is applied to the coupling hole and to the grommet to reduce noise and abrasion of the coupling hole, the hinge lever, and the grommet.

11. The door closing device of claim 6, further comprising a grease container attached to a lower surface of the cap and having an opening in a top thereof to hold grease therein, the grease held in the grease container permeating into a gap between the auxiliary hinge shaft and the grommet and into a gap between the grommet and the hinge lever, to reduce abrasion and noise generated due to the abrasion.

12. The door closing device of claim 11, wherein an internal diameter of the grease container is larger than a diameter of the coupling hole to allow the grease to drop into the grease container, thereby preventing the grease from dripping outside the door closing device.

13. The door closing device of claim 6, wherein the cap has a slot at a side thereof to receive the hinge lever, and has an upper through-hole and a lower through-hole formed respectively at an upper wall and a lower wall of the cap to allow the auxiliary hinge shaft to pass therethrough.